

TWO NEW SPECIES OF
DICTYNIDAE (ARANEAE) FROM PANAMA

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As previously pointed out (Chickering, '50), Petrunkevitch ('25) was the first to report a dictynid (*Mallos niveus* O. P.—Cambridge) from Panama. Gertsch ('46) reported a male of *Dictyna meditata* Gertsch from the Canal Zone Biological Area. This species is now known to be fairly common over much of that region of Panama where I have worked. *Thallumetus dulcineus* Gertsch was described in 1946 from a single male collected at El Volcan in February. In 1950 I described three species of dictynids as follows: *Dictyna alyceae*, *D. donaldi*, and *Thallumetus pusillus*. The first two were from Boquete, and the third was from the Canal Zone Biological Area. From my collection of 1950 I have selected two new species belonging to this family. These are described in the present paper in accord with my usual formula and under the following names: *Dictyna lecta* sp. nov., and *Thallumetus pullus* sp. nov.

It is expected that the general state of our available knowledge on the Dictynidae of Panama and other parts of Central America will be made clear when a revision of the family is published by Dr. W. J. Gertsch, American Museum of Natural History, who is now engaged in this important study.

This paper is the first of a series of publications dealing with the spider fauna of Panama depending in part or wholly upon collections made during my period of field work in various parts of this interesting country during the summer of 1950. This most recent of a series of visits to Panama was made possible through grants from the Penrose Fund of the American Philosophical Society and The Society of Sigma Xi. The descriptions were drawn up during the summer of 1951 while I enjoyed the many

advantages of the Museum of Comparative Zoology at Harvard College.

Genus *Dictyna* Sundevall, 1833

Dictyna lecta sp. nov.

(Figure 1)

Male holotype.—Total length 1.41 mm. (Abdomen and cephalothorax detached; otherwise in good condition). Carapace .704 mm. long; .55 mm. wide opposite second coxae where it is widest; pars cephalica very prominent and quite convex; almost circular from opposite palps; .352 mm. tall and, therefore, about .64 as tall as wide.

Eyes.—Eight in two rows: only AME diurnal. Viewed from above, posterior row moderately recurved. Viewed from in front, anterior row moderately procurved. Central ocular quadrangle wider behind than in front in ratio of 5 : 4; wider behind than long in ratio of 5 : 4; posterior row fully as wide as pars cephalica at that level; posterior row wider than anterior row in ratio of 28 : 25. Ratio of eyes AME : ALE :: PME : PLE=3.5 : 5 :: 4.5 : 5 (long diameters). AME separated from one another by a little more than 1.5 times their diameter, from ALE by their diameter. PME separated from one another by a little more than 1.5 times their diameter, from PLE by slightly less than 1.25 times their diameter. Laterals separated from one another by .3 of their diameter. Clypeus grooved below AME and ventral half strongly protrusive, the latter part provided with several stiff convergent bristles. Height of clypeus equal to about three times the diameter of AME.

Chelicerae.—Essentially vertical and parallel if taken as wholes; considerably bowed outward just above the middle of the outer border; excavated medially so as to form a long narrow oval opening between the two; with a prominent basal boss having a keel which extends for some distance; moderately concave in front; basal segment .40 mm. long; fang appears to be weak; impossible to determine exact number and position of teeth along fang groove without serious injury to type.

Maxillae.—Convergent; extend beyond lip about three tenths of their length; palp inserted into basal third.

Lip.—About as wide as long. Sternal suture straight.

Sternum.—Cordiform; moderately convex; only slightly longer than wide; widest between second coxae but nearly as wide between first coxae; with a moderately well developed coat of long light colored bristles; posterior end a blunt point between fourth coxae which are separated by nearly 1.5 times their width. All coxae of moderate length, but first are somewhat the most robust.

Legs.—1243. Width of first patella at "knee" .0758 mm., tibial index of first leg 10. Width of fourth patella at "knee" .05956 mm., tibial index of fourth leg 11.

	Femora	Patellae	Tibiae	Metatarsi	Tarsi	Totals
	(All measurements in millimeters)					
1.	.649	.162	.574	.412	.325	2.122
2.	.541	.162	.412	.304	.271	1.690
3.	.435	.108	.282	.293	.216	1.334
4.	.520	.140	.379	.401	.216	1.656
Palp	.335	.108	.119	—	.444	1.006

Each metatarsus bears a single long dorsal trichobothrium near the distal end of the segment; each tibia bears a long dorsal trichobothrium near the middle of the segment; other less conspicuous trichobothria may be present but this is uncertain. The calamistrum is well developed on the fourth metatarsus where it extends over the proximal four fifths of the segment.

Spines.—True spines seem to be completely lacking but bristles and spiniform hairs are numerous.

Palp.—The retrolateral tibial apophysis is very long and it projects at a right angle. The tarsus is much flattened and bent sharply toward the ventral side in its distal third; there is a long narrow cleft at its base and the basal hook is quite characteristically shaped. The cymbium is narrow and it projects beyond the embolus only a short distance; the embolus nearly encircles the structure (Fig. 1).

Abdomen.—Ovoid; .946 mm. long; longer than wide in ratio of 43 : 30; widest near the middle; the cribellum is undivided and quite normal in appearance; the six spinnerets are as usual in the genus.

Color in alcohol.—Carapace gray-brown with black streaks, lighter on top of the pars cephalica. Sternum and lip much the same but somewhat darker. Chelicerae and maxillae somewhat lighter. Legs and palps yellowish white. Abdomen: with a median dorsal yellowish stripe with irregular borders extending from near the base to the tip of the anal tubercle and enclosing two small central dark spots in its posterior half; dark brown elsewhere, obscurely spotted with yellowish.

Type locality.—Male holotype from El Volcan, R. P., August, 1950. No paratypes; female unknown.

Genus *Thallumetus* Simon, 1892

Thallumetus pullus sp. nov.

(Figures 2-5)

Male holotype.—Total length 1.755 mm. Carapace .704 mm. long; .682 mm. wide opposite second coxae where it is widest; .396 mm. tall and, therefore, about .58 as tall as wide; with steep and somewhat irregular descent almost immediately behind PME to bottom of posterior declivity opposite third coxae; no longitudinal thoracic groove observed; near bottom of steep posterior declivity there is a group of four or five moderately long stiff black bristles; pars cephalica quite convex and well separated from pars thoracica; with little or no hair but bristles are numerous around eyes and especially between both pairs of median eyes and below AME.

Eyes.—Eight in two rows, only AME dark. Viewed from above, both rows of eyes recurved. Viewed from in front, anterior row moderately procurved. Central ocular quadrangle only slightly wider behind than in front, wider behind than long in ratio of about 13 : 11. Ratio of eyes AME : ALE :: PME : PLE=4.5 : 4.5 :: 4 : 3.75 (ratios are difficult to establish with accuracy). AME separated from one another by slightly more than their diameter, from

ALE by their radius. PME separated by 1.5 of their diameter, from PLE by their diameter. Laterals barely separated. Clypeus markedly concave; height equal to about five diameters of AME. As already noted, the clypeus is provided with a cluster of bristles merging with those between AME.

Chelicerae.—Vertical, essentially parallel; with very slight bowing outward near base of outer margin; moderately excavated medially near middle to form a small oval opening between the two; with a moderately well developed basal boss; basal segment .35 mm. long; moderately robust; promargin of fang groove with three moderately stout teeth, retromargin with a single smaller one near distal end of groove (taken from paratype to avoid injury to holotype).

Maxillae.—Convergent; palp inserted into basal fourth; bluntly rounded at distal end.

Lip.—Wider than long in ratio of about 5 : 4; well rounded but not strongly narrowed at distal end; sternal suture very slightly procurved; maxillae extend beyond lip about two thirds of its length.

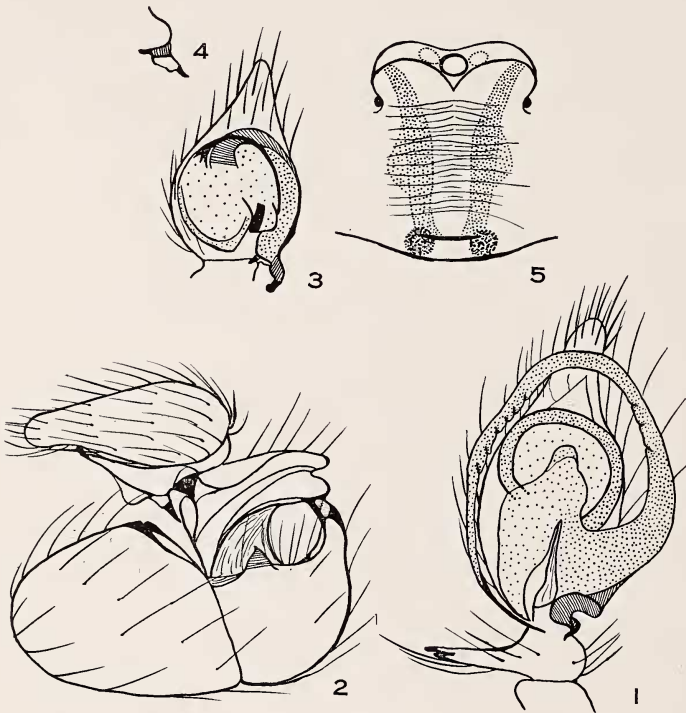
Sternum.—Somewhat scutiform; moderately convex; only slightly longer than wide; widest between second coxae but nearly as wide between first coxae; with a moderately well developed covering of long dark bristles; posterior end a bluntly rounded point extended between fourth coxae which are separated by slightly more than their diameter. All coxae of moderate length and nearly equal in width.

Legs.—1243. Width of first patella at "knee" .088 mm., tibial index of first leg 9. Width of fourth patella at "knee" .077 mm., tibial index of fourth leg 12.

	Femora	Patellae	Tibiae	Metatarsi	Tarsi	Totals
	(All measurements in millimeters)					
1.	.770	.220	.744	.528	.355	2.617
2.	.660	.220	.616	.484	.330	2.310
3.	.610	.176	.374	.440	.330	1.930
4.	.650	.176	.440	.484	.308	2.058
Palp.	.335	*.335	*.330	—	.330	1.350

* Including their processes.

The only trichobothrium so far seen with reasonable certainty is dorsal in position near the distal end of each metatarsus. The hairs of the calamistrum appear to be reduced in length but extend nearly the whole length of the fourth metatarsus.



Figures 1-5. External Anatomy of Dictynid Spiders. Fig. 1. *Dictyna lecta* sp. nov.; male palpal tibia and tarsus. Fig. 2. *Thallumetus pullus* sp. nov.; male palpal femur, patella, tibia, and tarsus; nearly retro-lateral view. Fig. 3. *T. pullus*; palpal tarsus; ventral view. Fig. 4. *T. pullus*; palpal basal tarsal apophysis. Fig. 5. *T. pullus*; epigynum.

Spines.—True spines are lacking but spiniform hairs are numerous. Claws appear to be the same as described in *T. pusillus* Chickering ('50).

Palp.—Short, highly modified in all four segments from femur to tarsus, inclusive. Femur deepened so that it is only longer than deep in ratio of 34 : 25; somewhat flattened laterally but very robust; its distal ventral rim is strongly chitinized. The patella is very robust and is drawn out distally to form a large strong chitinized ramus ending in a strong tooth; near its base there is a short robust retrolateral pointed tubercle. The tibia is also strongly modified; it is curved to meet the patellar ramus and together with this segment forms a kind of forceps; the tibial ramus terminates in three points between which the tip of the patellar ramus terminates; this segment also has a robust, strongly chitinized, retrolateral pointed tubercle near its base. The meeting place of the patella and tibia leaves a relatively large rounded aperture between them thus suggesting an important specific use. The most characteristic tarsal feature appears to be the conspicuous basal apophysis of special shape (Figs. 2-4).

Abdomen.—Broad at base, widest about two fifths from base, narrows to a point at anal tubercle, overlaps carapace somewhat; with a series of three transverse dorsal grooves in posterior fifth; with four quite clear dorsal sigilla in second fourth, the first pair especially distinct; cribellum of normal size, clearly undivided, with numerous stiff bristles along its anterior surface; six spinnerets as usual in the genus.

Color in alcohol.—Carapace light reddish brown with dark streaks. Sternum and mouth parts various shades of amber. Legs: nearly uniformly dark brown, lighter below. Abdomen: generally dark brown, nearly black above, lighter below; on the dorsum just anterior to middle there is a small irregular light spot which is more conspicuous on some of the paratypes.

Female allotype.—Total length 1.716 mm. Carapace .660 mm. long; .638 mm. wide; .264 mm. tall and, therefore,

about .41 as tall as wide. Pars cephalica much less prominent than in male. The characters of the female with respect to eyes, chelicerae, maxillae, lip, and sternum are so closely similar to those of the male that a detailed description of these parts is regarded as unnecessary.

Legs.—1423. Width of first patella at "knee" .08664 mm., tibial index of first leg 11. Width of fourth patella at "knee" .08123 mm., tibial index of fourth leg 11.

	Femora	Patellae	Tibiae	Metatarsi	Tarsi	Totals
	(All measurements in millimeters)					
1.	.748	.242	.572	.484	.355	2.401
2.	.660	.231	.484	.418	.352	2.145
3.	.572	.198	.418	.396	.308	1.892
4.	.616	.220	.528	.484	.308	2.156

The calamistrum is well developed, consisting of a row of curved hairs on the proximal four fifths of the fourth metatarsus.

Abdomen.—Essentially as in male. Cribellum well developed, normal to the genus.

Epigynum.—Relatively large; convex; with a short transverse lip near the genital groove; a small spermatheca lies at each end of the lip; two diverging stripes extend forward from the lip; lateral to the anterior end of each stripe there is a small depression (probably an opening); the anterior end of the epigynal plate is formed by a strongly chitinized curved band with a central opening. Dissection reveals the presence of several tubules, nodules, etc. just internal to the surface. The convex part of the plate is finely and transversely rugulose (Fig. 5).

Color in alcohol.—Almost identical with that of male except that the light areas on the dorsum are plainer; here in the female they are two light brownish spots separated by a central dark stripe; in some paratype females the light spots are large and quite conspicuous.

Type locality.—Male holotype from Canal Zone Biological Area, C. Z., July, 1950; female allotype from the

same locality, August, 1950. Several paratypes of both sexes from the same locality, July-August, 1950.

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CARNUS HEMAPTERUS NITZSCH ON A SCREECH OWL IN ARIZONA (DIPTERA). — In 1942 I recorded this ectoparasite from a flicker in New York State and from a screech owl in Florida, and reviewed what was known of its distribution and natural history (*Bull. Brooklyn Ent. Soc.*, 37: 140-149). I was informed since that it was found in British Columbia and California, the details of these occurrences to be published later by the discoverers. Meanwhile I may record that it occurs also in Arizona. A collection of bird-flies, recently received from Professor George D. Butler, Jr., of the University of Arizona, contains 5 deälated specimens (3 males and 2 females) taken April 24, 1938, by Mr. S. L. Jacot on a nestling Arizona screech owl, *Otus asio gilmani* Swarth, 9 miles east of Tucson, at 2300 ft. altitude. No doubt the insect is widely distributed in North America, but overlooked owing to its small size (1.5 to 3 mm.). — J. BEQUAERT, Museum of Comparative Zoology, Cambridge, Mass.